OCCURRENCE OF THE SOUTH AMERICAN FISH *PINGUIPES BRASILIANUS* (PINGUIPEDIDAE) IN THE MEDITERRANEAN

by

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RÉSUMÉ. - Présence de *Pinguipes brasilianus,* poisson sud américain (Pinguipedidae), en Méditerranée.

En 1990, deux *Pinguipes brasilianus* ont été capturés dans les eaux italiennes, l'un près de Messine et l'autre près de Loano (mer Ligure), deux localités séparées d'environ 900 km. Cette espèce étrangère, originaire des côtes d'Amérique du Sud, semble être un cas d'introduction d'espèce par transport dans l'eau des ballasts.

Key word. - Pinguipedidae - *Pinguipes brasilianus* - MED - First record.

The Mediterranean fauna is going through a phase of enrichment brought about by the arrival of exotic species both from Suez Canal (Steinitz, 1967; Por, 1978) and from the Straits of Gibraltar. Fishes play a leading role in this increasing diversity because at present fifty-five species are lesseptian (Golani, 1996) and about an equal number can be considered western immigrants. Although the means of arrival of these fishes is unknown, it is generally supposed to involve natural phenomena, such as the transport of eggs and larvae by incoming currents or active swimming by individuals living in the waters close to the Straits. This note concerns the occurence in the Mediterranean Sea of a Teleost species whose original habitat is the South West Atlantic, a case not consistent with the above mentioned hypotheses.

MATERIAL

In 1990 two specimens of an "alien" species were fished in Italian waters in two localities about 900 km apart (Fig. 1): a) Messina; on 4 February 1990, a specimen about 24 cm long was caught by longline. It was neither identified, nor preserved, but it was documented by photocolors, one of which, was published (Biagi, 1990) (Fig. 2); b) Loano; on 18 october 1990 an artisanal fisherman caught a 32.5 cm-long fish by trammels (Fig. 3). M. Torchio deposited it in the collection of the Civica Stazione Idrobiologica of Milan, where it remained uncatalogued.

DESCRIPTION OF THE LOANO SPECIMEN

D VII, 27 ; A I, 24 ; P 17; V 6 ; C 17 ; LL 98

Total length, 32.5 cm; head lenght, 7 cm; predorsal lenght, 8.5 cm; prepectoral lenght and preventral lenght, 8.3 cm.

Body robust, its thickest in the region of the posterior head and the insertion of the pectorals. Head conical, the mouth located in inferior position and lined by very large lips. After the pectoral girdle, the body becomes progressively compressed. Pectorals rounded, pelvics thick and fleshy especially on the outer side. Both dorsal and anal fins extend with constant height toward the caudal peduncle, where they end symmetrically. Caudal truncate, except for a small protruding upper portion. Eyes oval and oblique, with an interorbital space larger than twice their longest diameter.

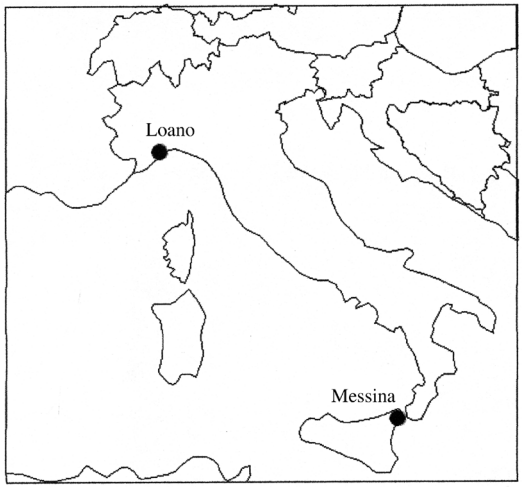

Figure 1. - The localities where *Pinguipes brasilianus* was found.

Operculum ending with a spine covered in part by the skin. Anterior nostril tubular and cut obliquely so that the rear portion is larger.

The colour is brown on the dorsal and light brown on the ventral surfaces. On the flanks 12 brown bands continue the dorsal coloration ventrally. After the second, the bands are alternately wide and thin. A dark spot at the base of the caudal rays above the lateral line. In the freshly caught fish, head and fins also showed deep blue shades which disappeared in the fixative liquid.

DISCUSSION

Pinguipes brasilianus was described by Cuvier (Cuvier and Valenciennes, 1829) on the basis of a specimen received from Brazil. The type had: D VII, 27; A I, 26; C 17; P 17; V I, 5. Two syntypes are at present available in the Muséum national d'Histoire naturelle (MNHN 1715 and MNHN A5495) of Paris (Séret, pers. com.).

Some years later the fish was collected in Patagonia during the expedition of the "Beagle" and described by Jenyns (1842) under the name of *P. fasciatus*. This author noted 24 instead of 26 anal fin rays, and small differences in body proportion and in the dentition compared to the species described by Cuvier. He also emphasised the brown bands, which characterised the coloration, a characteristic ignored by the first author, who however had written « cette description des couleurs est peut-être fort éloignée de l'état frais ». Berg (1895) gave the distribution of *P. fasciatus* as "Costa Patagonica, Mar del Plata, Montevideo" noting that the fish was not rare in these localities during the winter. He also gave this range of meristic characters : D VI-VII, 26-27; A 24-25; P 18; V 6; C 15-18; Ll 80. De Miranda Ribeiro (1915) noted that young and adult fish may present different colours (he observed striped specimens measuring less than 21 TL and 33 cm TL) and, given

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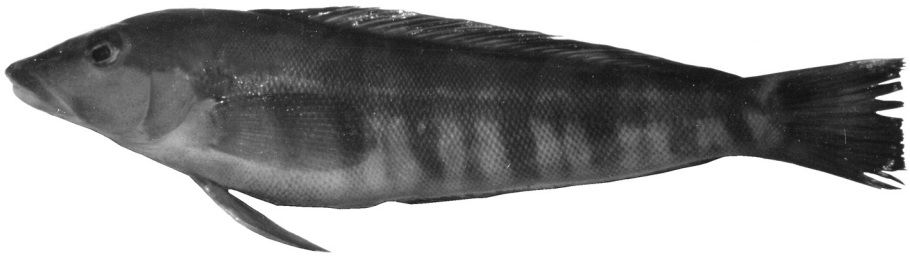

Figure 2. - *Pinguipes brasilianus*, 24 cm TL Messina, Sicily (photo courtesy of V. Biagi).

Figure 3. - *Pinguipes brasilianus*, 32.5 cm. TL Loano, Ligurian Sea.

the overlap of most of the meristic characteristics, considered *P. fasciatus* a younger synonym of *P. brasilianus*. He also depicted a fish which was 30 cm long without stripes on its flanks.

Fowler (1951) described a specimen of *Pinguipes brasilianus* of Rio de Janeiro with meristics (D VII, 26; A 25) within the range indicated by Berg (1895).

The synonymy of *P. brasilianus* and *P. fasciatus* is at present generally accepted (Menni *et al*., 1984). The validity of genus *Pinguipes* or *Mugiloides* was discussed by Rosa and Rosa (1987) and resolved in favour of *Pinguipes*, so also the family name Mugiloididae (still used by recent authors) should be substituted by Pinguipedidae (Rosa and Rosa, 1997). This family is represented in the Red Sea and along the Atlantic Coast of Africa by several species of *Parapercis* (Cantwell, 1964; Smith and Heemstra, 1986). On the other hand, the genus *Pinguipes* is distributed on both sides of South America with *P. chilensis* (Molina) and *P. brasilianus*. It is possible that the latter species reaches as far as the Isle of Trinidad in an easterly direction In fact, Paiva Carvalho (1950) mentioned a *Neopercis* sp. with D VII, 26. Given these distributions of *Pinguipes*, it is necessary to admit the possibility of transport by ship from South Atlantic to Italian waters.

It is amazing that two individuals of this species have been found not only alive inside a harbour, as generally occurs in the case of man-transported species, but apparently well established in rich coastal communities of fish, such as those fished by small artisanal or sports fisheries in the Ligurian Western Riviera or at Messina in Sicily.

Several invertebrate species have reached the Mediterranean by maritime routes: fouling which encrusts hulls, ballast waters and the pipes for its pumping and sometimes acquaria on board are possible ways. Members of the genus *Pinguipes* can reach 80 cm TL (Mann, 1954), do not seem to be attractive to fish enthusiasts, so the most probable means of transport are ballast waters.

South American origin is probable in the case of the alien species *Oculina patagonica* (Zibrowius, 1980): this harmless colonial madreporarian was discovered in the sixties near Savona (not far from Loano) and later resulted abundant in several localities along the Spanish Mediterranean Coast (Zibrowius, 1983). In Ligurian waters, it seems to be still in a phase of spreading.

As for *Pinguipes brasilianus*, it is impossible to say whether the above-mentioned cases are sporadic events which ended with the capture of the fish, or if large numbers of eggs or larvae were transported with the result that the fish could still be present in the Mediterranean. The same uncertainty applies with regard to some other species of fish which are commonly called “immigrants”.

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of the Sicilian specimen and informations about its capture. M. Relini photographed the Ligurian specimen.

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